The Zika Virus Explained: Part II

Population Health Sciences

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The governor of Florida recently announced that there are 30 cases of locally-acquired, mosquito-borne Zika virus in his state, and the number appears to be growing. As a follow-up to our first Q&A blog about the Zika virus, we asked Susan Coffin, MD, MPH, to update our readers on these recent cases and what people in infected areas can do to protect themselves. Dr. Coffin is the clinical director of the Division of Infectious Diseases at The Children's Hospital of Philadelphia (CHOP).

Q: What is the source of the recent Zika cases found in Florida?

A: Most of the recent Zika cases found in Florida are concentrated in Miami-Dade County, and our best guess is that most of these cases are being passed from mosquitoes to humans. Although most mosquitoes in this very small neighborhood are free of Zika virus, public health workers have found that a small percentage do carry it. Therefore, it is very important for homeowners to eliminate areas around their property where mosquitoes can breed and for all individuals to take measures to avoid mosquito bites.

Q: What are the implications of this and how can people in Florida and elsewhere protect themselves?

This means that there is a small chance that if you live in or visit this small neighborhood AND get bitten by a mosquito, you are at risk of getting Zika virus. Therefore, it is very important for homeowners and landlords to take necessary precautions to eliminate areas where mosquitoes can breed and again, for all individuals to take measures to avoid mosquito bites.

To reduce areas where mosquitoes can breed, it is important to eliminate (whenever possible) areas that gather water such as planters, trash cans, old tires and unused play equipment. For containers that people use to hold water, such as bird baths, wading pools and watering cans, people should drain all of the water and scrub the container thoroughly at least once a week.

To avoid mosquito bites, use insect repellant and wear clothing that covers exposed skin. When indoors, use air conditioners and keep windows closed if possible. If no air-conditioning is available, make sure all windows and doors have screens and that the screens are intact.

Q: Are you aware of any other states that are taking precautions or preparing for potential cases and how this is being done? Has Pennsylvania taken any steps to prepare for a potential outbreak?

A: Due to the localized outbreak in Florida, local officials have begun more aggressive mosquito control measures including spraying. In New York City, city officials have recommended that health care providers increase surveillance to detect locally acquired Zika infections by testing individuals if they present with symptoms consistent with Zika infection. Pennsylvania has provided detailed recommendations to providers on laboratory testing of individuals who have recently traveled to a Zika endemic area.

Q: How has the federal government responded to this public health crisis?

A: The U.S. Centers for Disease Control and Prevention (CDC) has supported the World Health Organization's efforts to conduct surveillance and perform mosquito control in regions of the Caribbean and South America with Zika. To date, the U.S. response to the Zika threat has been funded in large part by money allocated to Ebola virus preparedness. There's a federal spending bill pending in the Senate that would provide more than $1 billion for Zika research and prevention. This bill will be taken up again in the fall.

Q: In addition to microcephaly, we've recently seen in the news cases of babies born with a condition called arthrogryposis, which recent studies suggest may also be associated with the Zika virus. What is arthrogryposis and how is it connected to the Zika virus?

Arthrogryposis is a condition in which infants are born with contractures (limited mobility) and deformities of their extremities. Preliminary analysis suggests that babies born to women with Zika may be at increased risk of this condition.

Q: What can pregnant women do to protect themselves from the Zika virus? Is there any way to prevent microcephaly if a pregnant woman becomes infected with Zika?

The most important ways a pregnant woman can protect herself and her unborn child from Zika is to prevent exposure. This includes following the measures described above to prevent exposure to mosquitos and mosquito bites. In addition, pregnant women should not travel to an area in which Zika virus is endemic.

Last, women who are pregnant should be aware of the risk of sexual transmission of Zika. If a woman's partner has traveled to a Zika endemic region in the past six months, she should use barrier precautions (i.e. condoms) when having intercourse because Zika virus can spread though semen and live virus can persist in semen for more than six months. She should follow barrier precautions for the duration of the pregnancy.

At present, there are no treatments that can be given to a pregnant woman who has contracted Zika. However, testing and fetal monitoring by ultrasound are recommended for women who have traveled to a Zika endemic region during their pregnancy.

Q: You said that the virus can live in semen for six months, but do we know how long the virus can generally live in someone who is infected with it?

Most people who are infected with Zika virus clear it from their blood within two weeks. However, pregnant women and babies infected prior to birth may harbor the virus for longer periods of time. We are learning that live Zika virus can persist in semen and possibly other bodily fluids for long periods of time (more than six months in some individuals). Several cases of Zika virus infection have been linked to sexual transmission.

Q: What types of treatment do children with microcephaly require?

Infants with microcephaly require close developmental follow-up based upon the specific deficits that doctors identify. These may include vision and/or hearing loss, limited mobility and cognitive impairments.

Q: Have there been any updates regarding vaccines or treatment options?

Several candidate vaccines (i.e., possible new vaccines that researchers are studying for potential use in the future) have shown preliminary efficacy in protecting laboratory animals from Zika virus infections. However, it is likely to be several years until there is a vaccine available for use in humans.

Q: What are some good resources for pregnant women and the general population to refer to if they have questions or want more information?

I recommended resources provided by the CDC and the American Academy of Pediatrics (AAP). You can access these materials online on the CDC and AAP websites.



Susan Coffin, MD, MPH